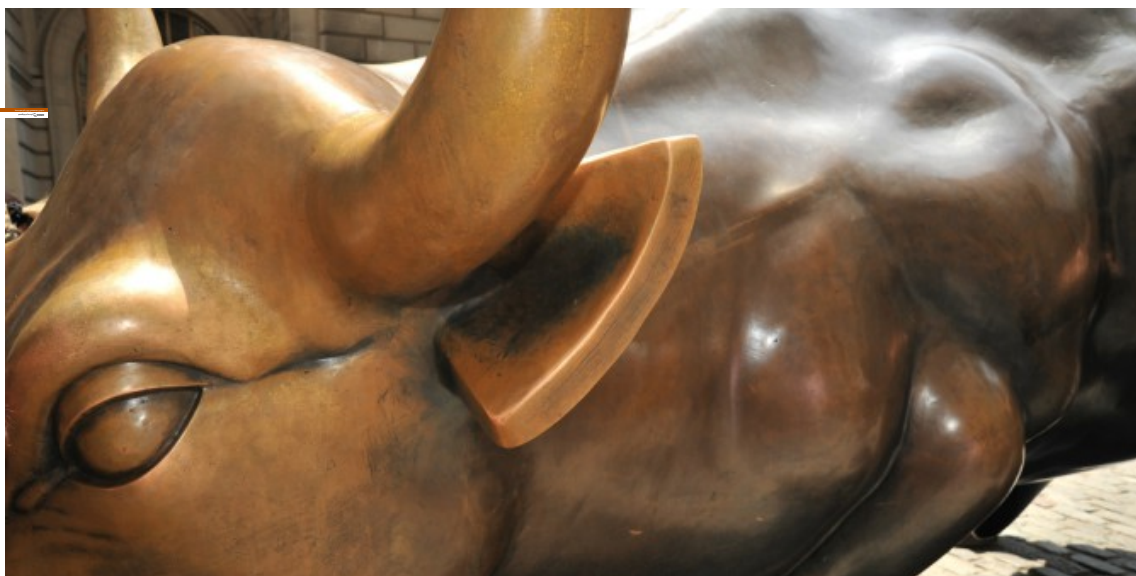


Bond prices both reflect and influence the fundamentals



Most economists assume that bond prices merely reflect fundamental factors such as the bond's interest rate, its face value and the likelihood that the bond issuer defaults. Bond issuers that are more likely to default will have to offer a higher interest to compensate the buyer for the higher risk.

Most economists stop here. However, for real-world bonds, it is very likely that prices not only reflect the fundamentals, but also influence those fundamentals. The same can hold for other assets, but we will focus on bonds here to keep things simple. For bonds, this feedback from prices to fundamentals is very intuitive: the prices achieved in the initial public offering (IPO) determine the financing costs for the bond issuer. If these financing costs are too high, the bond issuer is more likely to default on its debt, for example because the bond issuer goes bankrupt.

One may ask whether it is really possible that markets misprice bonds so severely that this has noticeable effects on the economic situation or even on the survival of bond issuers. This is not an easy question to address empirically, because the fundamentals of bond issuers are in general unobservable. Thinking for example of the euro crisis, one may claim that some of the southern European countries were brought into economic distress by the increase in their financing costs, but it is also possible that the increase in their financing costs was mainly a result of a deterioration of the fundamentals of these countries.

We know of one example nicely illustrating how the feedback from prices to fundamentals can be of crucial importance. This example is the bankruptcy of the toy retailer Toys "R" Us in the fall of 2017. The company was paying about 400 million USD a year to service its debt. While its debt was high, profits excluding the debt service were around 500-600 million USD per year. Consequently, investors considered the company to be able to service its debt and until the beginning of September 2017 the company's bonds traded at almost par (meaning that investors deemed the bonds to be of very low risk).

However, the company did not succeed to roll over its debt, that is, it could not find buyers for new debt issues. Within a week, its existing bonds lost about 80 per cent of their value and the company filed for bankruptcy later in September. In this example, it was indeed the (prohibitive) financing cost for the company that led to the bankruptcy – until right before it became clear that the company could not roll over its debt the existing bonds traded at almost par!

As noted earlier, it is difficult to estimate whether bonds subject to default risk are priced according to fundamental factors empirically, because it will often be impossible to observe or disentangle the different potential forces at work. However, it is possible to experimentally investigate whether these feedback effects matter for market prices in a controlled laboratory setting. This is what we do in a recent [research article](#). We develop a simple model of bond pricing where the price achieved for the bonds in the IPO influences the probability that the bond issuer defaults. We subsequently observe laboratory participants who participate in IPOs and trade bonds in secondary markets in a variety of treatments. These treatments feature both decreasing and increasing fundamental values. The treatments also include situations in which it is relatively easy to understand the feedback effects from prices to default probabilities and situations in which it is more difficult.

The advantage of this laboratory setting is that we have full knowledge of the bond's underlying fundamental value and on its dependence on prices achieved in the IPO. We can therefore observe how well market prices track this underlying fundamental value. Each group of participants takes part in an identical market four different times. This allows us to observe not only how well market prices reflect the true underlying fundamental values when participants experience this market for the first time but also how well they learn to price the bonds when the same market is repeated multiple times.

We find that participants who have no prior experience pricing bonds subject to default risk have difficulties pricing the new bond issue in the IPO. Prices are on average around 40-50% below the equilibrium value among these inexperienced participants in all treatments. This means that we observe more defaults than economic theory would predict. When inexperienced participants trade the bonds in the secondary market, prices are also often far from the equilibrium. However, in the secondary market prices are usually too high instead of too low. Things change when the same market is repeated a few times. With experience, participants learn to price the bonds well both in the IPO and in the secondary market. This learning takes place in all treatments.

We can only speculate as to which of our results – the poor pricing of inexperienced participants or the accurate pricing of participants after experiencing an identical market multiple times – has more real-world relevance for the actual pricing of bonds subject to default risk. Still, we think there are good reasons to believe that feedback effects from default risk to prices and from prices to default risk are in fact operating in real-world bond markets. For instance, the investor George Soros has suggested that feedback effects of the type we have identified in the laboratory – a phenomenon Soros terms “reflexivity” – are indeed pervasive in financial markets. We look forward to more studies examining this feedback (or the feedback from prices to fundamentals more generally) theoretically, experimentally, and using field data.



Notes:

- This blog post is based on the authors' paper [An Experimental Study of Bond Market Pricing](#), *Journal of Finance*, forthcoming
- The post gives the views of its authors, not the position of LSE Business Review or the London School of Economics.
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